

**October 2004 Water Sampling**

**Validation Data Package  
for  
Configuration 2 Interim Action  
Injection Test Midpoint Sampling  
and Baseline Area Sampling  
Moab, Utah**

February 2005

# Moab, Utah

October 14, 15, and 19, 2004

## Data Package Contents

This data package includes the following information:

<u>Item No.</u>	<u>Description of Contents</u>
1.	<b>Sampling Event Summary</b>
2.	<b>Sample Location Map</b>
3.	<b>Data Assessment Summary</b>  Field Activities Verification Checklist Laboratory Performance Assessment Field Analysis/Activities Certification

### Attachment 1—Data Presentation

Water Quality Data

Water Level Data

### Attachment 2—Trip Report

## **Sampling Event Summary**

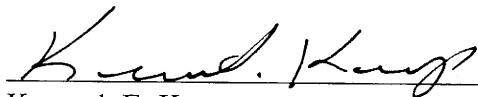
**Site:** Moab, Utah

**Sampling Period:** October 14, 15, and 19, 2004

The purpose of this sampling event was to collect data that can be used to evaluate the performance of the Configuration 2 injection system. This is the second round of sampling since the injection system was first started on October 6, 2004. Samples were also collected from the baseline area located just south of Moab Wash.

Sampling and analysis was conducted in accordance with the Operations, Maintenance, and Performance Monitoring Plan for the Interim Action Ground Water Treatment System, February 2004. Ground water samples from Configuration 2 were collected from eight observation wells (0401, 0402, 0580, 0582, 0583, and 0585-0587), and three piezometers (0590, 0591, and 0593). A sample of the fresh water injectate was also collected. Ground water samples at the baseline area were collected from three observation wells (0405, 0488, and 0493) and two piezometers (0495 and 0497). One river water sample (236) was also collected.

Analysis and interpretation of the validated data presented in this package will be reported as part of a performance evaluation report on the injection system scheduled in 2005.

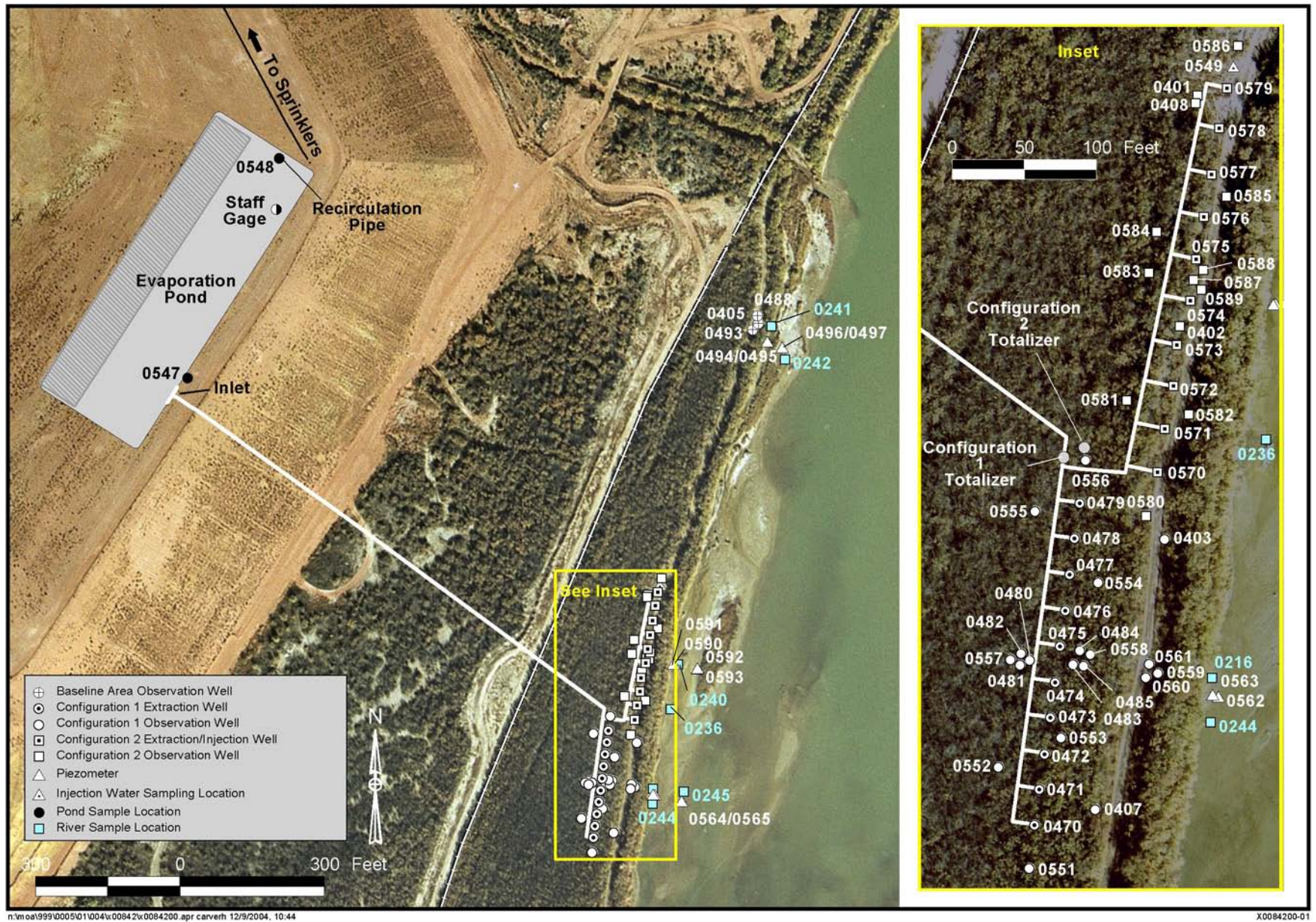


Kenneth E. Karp  
Site Lead

2-8-05

Date

## **Sampling Location Map**



Sample Locations at the Interim Action Well Field and Baseline Area (may include locations not sampled)

## **Data Assessment Summary**

## Water Sampling Field Activities Verification Checklist

Project	Moab, Utah	Date(s) of Water Sampling	October 14,15,19, 2004
Date(s) of Verification	12/27/04	Name of Verifier	Jeff Price

	<b>Response (Yes, No, NA)</b>	<b>Comments</b>
1. Is the SAP the primary document directing field procedures?	Yes	
List other documents, SOP's, instructions.	NA	
2. Were the sampling locations specified in the planning documents sampled?	Yes	
3. Was a pre-trip calibration conducted as specified in the above named documents?	Yes	
4. Was an operational check of the field equipment conducted twice daily?	Yes	
Did the operational checks meet criteria?	Yes	
5. Were the number and types (alkalinity, temperature, Ec, pH, turbidity, DO, ORP) of field measurements taken as specified?	Yes	
6. Was the Category of the well documented?	Yes	
7. Were the following conditions met when purging a Category I well:		
Was one pump/tubing volume purged prior to sampling?	Yes	
Did the water level stabilize prior to sampling?	Yes	
Did pH, specific conductance, and turbidity measurements stabilize prior to sampling?	Yes	
Was the flow rate less than 500 mL/min?	Yes	
If a portable pump was used, was there a 4 hour delay between pump installation and sampling?	NA	



## Water Sampling Field Activities Verification Checklist (continued)

8. Were the following conditions met when purging a Category II well:

Was the flow rate less than 500 mL/min?

Yes

Was one pump/tubing volume removed prior to sampling?

Yes

9. Were duplicates taken at a frequency of one per 20 samples?

Yes

10. Were equipment blanks taken at a frequency of one per 20 samples that were collected with nondedicated equipment?

Yes

11. Were trip blanks prepared and included with each shipment of VOC samples?

NA

12. Were QC samples assigned a fictitious site identification number?

Yes

Was the true identity of the samples recorded on the Quality Assurance Sample Log?

Yes

13. Were samples collected in the containers specified?

Yes

14. Were samples filtered and preserved as specified?

Yes

15. Were the number and types of samples collected as specified?

Yes

16. Were chain of custody records completed and was sample custody maintained?

Yes

17. Are field data sheets signed and dated by both team members?

Yes

18. Was all other pertinent information documented on the field data sheets?

Yes

19. Was the presence or absence of ice in the cooler documented at every sample location?

Yes

20. Were water levels measured at the locations specified in the planning documents?

Yes

## Laboratory Performance Assessment

### General Information

Requisition No.: 04100121  
Sample Event: October 14, 15, and 19, 2004 Water Sampling  
Site(s): Moab, Utah  
Laboratory: Paragon Analytics  
Work Order No.: 0410127  
Analysis: Metals and inorganics  
Validator: Jeff Pirce/Steve Donivan  
Review Date: November 24, 2004

This validation was performed according to *Standard Practice for Validation of Laboratory Data*, GT-9(P) (2004). All analyses were successfully completed. The samples were prepared and analyzed using accepted procedures based on methods specified by line item code, which are listed in Table 1.

Table 1. Analytes and Methods

Analyte	Line Item Code	Prep Method	Analytical Method
Uranium, U	GJO-01	SW-846 3005A	SW-846 6020
Chloride, Cl	MIS-A-039	SW-846 9056	SW-846 9056
Sulfate, SO <sub>4</sub>	MIS-A-044	SW-846 9056	SW-846 9056
Ammonia as N, NH <sub>3</sub> -N	WCH-A-005	MCAWW 350.1	MCAWW 350.1
Total Dissolved Solids, TDS	WCH-A-033	MCAWW 160.1	MCAWW 160.1

### Data Qualifier Summary

The uranium results are qualified as “J” or “U” as listed in Table 2.

Table 2. Qualified Results

Sample Number	Location	Analyte	Flag	Reason
0410127-16	2577	U	U	Less than 5 times the blank
All except 0410127-16	All except 2577	U	J	Serial dilution failure

### General Comments

This laboratory validation was performed according to *Standard Practice for Validation of Laboratory Data*, GT-9(P), August 2004.

### Sample Shipping/Receiving

Paragon Analytics in Fort Collins, Colorado, received 22 samples in two shipments on October 16 and 21, 2004, accompanied by Chain of Custody (COC) forms. The COC forms were checked to confirm that all of the samples were listed and that signatures and dates were present, indicating sample relinquishment and receipt. The sample submittal documents including the Chain of Custody Forms and the sample tickets had no errors or omissions.

### Preservation and Holding Times

The sample shipments were received intact with temperature within the coolers of 1.8 and 2.4 degrees centigrade ( $^{\circ}$  C), which is in compliance with requirements. All samples had been preserved correctly for the requested analyses and all samples were analyzed within the applicable holding times.

### Laboratory Instrument Calibration

All laboratory instrument calibrations were performed correctly in accordance with the cited methods.

Calibrations for uranium were performed on October 26 and 27, 2004, using 4 calibration standards resulting in correlation coefficient ( $r^2$ ) values greater than 0.995. The absolute values of the intercepts were less than 3 times the method detection limit (MDL). Calibration and laboratory spike standards were prepared from independent sources. Initial and continuing calibration verification (CCV) checks were made at the required frequency resulting in 11 CCVs. All calibration checks met the acceptance criteria. Reporting limit verification checks were made at the required frequency, were within the acceptance criteria, and the linearity of the calibration curve near the practical quantitation limit was verified. The mass calibration and resolution was checked at the beginning of each analytical run and the internal standard recoveries were stable and within acceptance ranges.

Calibrations were performed for chloride and sulfate using 5 calibration standards on October 19, 20, 28, and 29, 2004. The  $r^2$  values were greater than 0.995 and intercepts less than 3 times the MDL. Initial calibration and calibration check standards were prepared from independent sources. CCVs were not made at the correct frequency. The Laboratory Coordinator was contacted and it was agreed that the affected samples would be re-analyzed. The laboratory issued a Non-Conformance Report and re-analyzed the samples with acceptable results. There were a total of 19 CCVs analyzed, all meeting the acceptance criteria.

The initial calibration for  $\text{NH}_3\text{-N}$  was performed using 6 calibration standards on October 22 and 29, 2004, resulting in  $r^2$  values greater than 0.995. Initial and continuing calibration checks were made at the required frequency, resulting in 9 CCVs. All initial and continuing calibration verifications were within the acceptance criteria.

There is no initial or continuing calibration requirement associated with the determination of total dissolved solids.

### Method and Calibration Blanks

The uranium initial and continuing calibration blanks were below the practical quantitation limits. The chloride, sulfate, NH<sub>3</sub>-N, and TDS method blanks and initial and continuing calibration blanks were below the method detection limits.

### Inductively Coupled Plasma (ICP) Interference Check Sample (ICS) Analysis

ICP interference check samples were analyzed at the required frequency and all results met the acceptance criteria.

### Matrix Spike Analysis

Two pairs of matrix spike and matrix spike duplicate samples (MS/MSD) were analyzed for uranium with acceptable recovery and precision. MS/MSD pairs were analyzed for NH<sub>3</sub>-N and sulfate with acceptable results.

### Laboratory Replicate Analysis

The relative percent difference values for the matrix spike duplicate and laboratory duplicate sample results for chloride, sulfate, NH<sub>3</sub>-N, TDS, and uranium were less than 20 percent.

### Laboratory Control Sample

Laboratory control samples were analyzed at the correct frequency with acceptable results for all analysis categories.

### Metals Serial Dilution

Serial dilutions were performed during the uranium analysis. The serial dilution performed on sample 0410123-29 failed to meet the acceptance criteria. All uranium results greater than the method detection limit are qualified as "J."

### Detection Limits/Dilutions

The samples were diluted prior to analysis of uranium to reduce interferences. Samples were diluted in a consistent and acceptable manner when required with the following exception. The relative percent difference of the chloride and sulfate results for the field duplicate was approximately 70 percent. The laboratory was contacted on January 11, 2005, with a request to review the suspect data. The laboratory determined that an error was made during the chloride and sulfate analysis when entering the dilution factor. The laboratory issued a Non-Conformance Report (NCR # 006276) on January 11, 2005, to document the error and implement additional data review to reduce manual data entry errors. Replacement data were received on January 21, 2005. The required detection limits were achieved for all analytes.

### Completeness

Results were reported in the correct units for all analytes requested using contract-required laboratory qualifiers.

### Chromatography Peak Integration

The integration of analyte peaks was reviewed for all ion chromatography data. The manual integrations performed were acceptable and all peak integrations were satisfactory.

### Electronic Data Deliverable (EDD) File

An EDD file arrived on November 15, 2004; the EDD validation application identified no problems with the EDD file.

## Field Analyses/Activities

The following information summarizes the field analyses and activities for this sampling event period.

### Field Activities

All monitor well results were qualified with an “F” flag in the database indicating the wells were purged and sampled using the low-flow sampling method. Extraction wells are not sampled using the low-flow sampling method.

One duplicate sample was collected from well 0402. There are no established regulatory criteria for the evaluation of field duplicate samples; therefore, EPA guidance for *laboratory* duplicates (which is conservative for field duplicates) was used to assess the precision of the field duplicates. All duplicate results fall within the +/- 20 relative percent difference criteria and are considered acceptable. An equipment blank was collected and analyzed for the same constituents as the Moab environmental samples. Concentrations measured in the equipment blank were below their respective contract required detection limit; therefore, equipment blank results are considered acceptable.

## Certification

All analytical quality control criteria were met except as qualified on the Ground Water Quality Data by Parameter, Surface Water Quality by Parameter, or equipment/trip blank database printouts. The meaning of data qualifiers is defined on the database printouts or defined in the U.S. Environmental Protection Agency Contract Laboratory Program Statement of Work for Inorganic Analysis, Multi-Media Multi-Concentration, Document Number ILMO2.0, 1991. All data in this package are considered validated and may be treated as final results.

Results were reported in correct units for all analytes requested, appropriate contract-required laboratory qualifiers and target analyte lists were used, and the required detection limits were met when possible, or an explanation of why they were not met was given in the laboratory case narrative.

Laboratory Validation Lead:

Steve Donovan  
Steve Donovan

2-8-2005  
Date

Field Activities Validation Lead:

Jeff Price  
Jeff Price

2/3/05  
Date

**Attachment 1**  
**Data Presentation**



## **Water Quality Data**

GENERAL WATER QUALITY DATA BY LOCATION (USEE105) FOR SITE MOA01, Moab Site  
LOCATION: 0236 <surface location, river>  
REPORT DATE: 2/8/2005 10:43 am

PARAMETER	UNITS	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB DATA QA	DETECTION LIMIT	UN- CERTAINTY
Alkalinity, Total (As CaCO3	mg/L	10/15/2004	0001	0.00 - 0.00	398		#	-
	mg/L	10/19/2004	0001	0.00 - 0.00	292		#	-
Ammonia Total as N	mg/L	10/15/2004	0001	0.00 - 0.00	95		#	2
	mg/L	10/19/2004	0001	0.00 - 0.00	79		#	5
Chloride	mg/L	10/15/2004	0001	0.00 - 0.00	2000		#	100
	mg/L	10/19/2004	0001	0.00 - 0.00	1100		#	40
Oxidation Reduction Potent	mV	10/15/2004	N001	0.00 - 0.00	147		#	-
	mV	10/19/2004	N001	0.00 - 0.00	128		#	-
pH	s.u.	10/15/2004	N001	0.00 - 0.00	7.63		#	-
	s.u.	10/19/2004	N001	0.00 - 0.00	8.07		#	-
Specific Conductance	umhos/c	10/15/2004	N001	0.00 - 0.00	16476		#	-
	umhos/c	10/19/2004	N001	0.00 - 0.00	4578		#	-
Sulfate	mg/L	10/15/2004	0001	0.00 - 0.00	7000		#	250
	mg/L	10/19/2004	0001	0.00 - 0.00	3800		#	100
Temperature	C	10/15/2004	N001	0.00 - 0.00	17.77		#	-
	C	10/19/2004	N001	0.00 - 0.00	16.07		#	-
Total Dissolved Solids	mg/L	10/15/2004	0001	0.00 - 0.00	15000		#	200
	mg/L	10/19/2004	0001	0.00 - 0.00	9200		#	200
Turbidity	NTU	10/19/2004	N001	0.00 - 0.00	90.9		#	-
Uranium	mg/L	10/15/2004	0001	0.00 - 0.00	2.200	J	#	0.00083
	mg/L	10/19/2004	0001	0.00 - 0.00	1.400	J	#	0.00083

GENERAL WATER QUALITY DATA BY LOCATION (USEE105) FOR SITE MOA01, Moab Site  
LOCATION: 0236 <surface location, river>  
REPORT DATE: 1/31/2005 9:05 am

PARAMETER	UNITS	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB DATA QA	DETECTION LIMIT	UN- CERTAINTY
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RECORDS: SELECTED FROM USEE100 WHERE site\_code='MOA01' AND location\_code  
in('0236','0401','0402','0580','0582','0583','0585','0586','0587','0590','0591','0593','0549','0405','0488','0493','0495','0497','0581','0584','0240') AND (data\_validation\_qualifiers IS NULL OR  
data\_validation\_qualifiers NOT LIKE '%R%' AND data\_validation\_qualifiers NOT LIKE '%X%' ) AND DATE\_SAMPLED between #10/14/2004# and #10/19/2004#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- \* Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- > Result above upper detection limit.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- C Pesticide result confirmed by GC-MS.
- D Analyte determined in diluted sample.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- J Estimated
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compound (TIC).
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.

DATA QUALIFIERS:

- |  |  |                    |
|--|--|--------------------|
| F Low flow sampling method used.                     | G Possible grout contamination, pH > 9.        | J Estimated value. |
| L Less than 3 bore volumes purged prior to sampling. | Q Qualitative result due to sampling technique | R Unusable result. |
| U Parameter analyzed for but was not detected.       | X Location is undefined.                       |                    |

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GENERAL WATER QUALITY DATA BY LOCATION (USEE105) FOR SITE MOA01, Moab Site  
LOCATION: 0401 <well>  
REPORT DATE: 2/8/2005 10:43 am

PARAMETER	UNITS	SAMPLE:		DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS:			DETECTION LIMIT	UN- CERTAINTY
		DATE	ID			LAB	DATA	QA		
Alkalinity, Total (As CaCO3	mg/L	10/15/2004	0001	18.00 - 18.00	402	F	#		-	-
Ammonia Total as N	mg/L	10/15/2004	0001	18.00 - 18.00	150	F	#		5	-
Chloride	mg/L	10/15/2004	0001	18.00 - 18.00	370	F	#		20	-
Oxidation Reduction Potent	mV	10/15/2004	N001	18.00 - 18.00	123	F	#		-	-
pH	s.u.	10/15/2004	N001	18.00 - 18.00	7.51	F	#		-	-
Specific Conductance	umhos/c	10/15/2004	N001	18.00 - 18.00	4961	F	#		-	-
Sulfate	mg/L	10/15/2004	0001	18.00 - 18.00	1600	F	#		50	-
Temperature	C	10/15/2004	N001	18.00 - 18.00	16.18	F	#		-	-
Total Dissolved Solids	mg/L	10/15/2004	0001	18.00 - 18.00	2900	F	#		80	-
Turbidity	NTU	10/15/2004	N001	18.00 - 18.00	7.76	F	#		-	-
Uranium	mg/L	10/15/2004	0001	18.00 - 18.00	0.460	JF	#		0.00083	-

GENERAL WATER QUALITY DATA BY LOCATION (USEE105) FOR SITE MOA01, Moab Site  
LOCATION: 0401 <well>  
REPORT DATE: 1/31/2005 9:05 am

PARAMETER	UNITS	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB DATA QA	DETECTION LIMIT	UN- CERTAINTY
RECORDS: SELECTED FROM USEE100 WHERE site_code='MOA01' AND location_code in('0236','0401','0402','0580','0582','0583','0585','0586','0587','0590','0591','0593','0549','0405','0488','0493','0495','0497','0581','0584','0240') AND (data_validation_qualifiers IS NULL OR data_validation_qualifiers NOT LIKE '%R%' AND data_validation_qualifiers NOT LIKE '%X%') AND DATE_SAMPLED between #10/14/2004# and #10/19/2004#								

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- \* Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- > Result above upper detection limit.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- C Pesticide result confirmed by GC-MS.
- D Analyte determined in diluted sample.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- J Estimated
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compound (TIC).
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.

DATA QUALIFIERS:

- |  |  |                    |
|--|--|--------------------|
| F Low flow sampling method used.                     | G Possible grout contamination, pH > 9.        | J Estimated value. |
| L Less than 3 bore volumes purged prior to sampling. | Q Qualitative result due to sampling technique | R Unusable result. |
| U Parameter analyzed for but was not detected.       | X Location is undefined.                       |                    |

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GENERAL WATER QUALITY DATA BY LOCATION (USEE105) FOR SITE MOA01, Moab Site  
LOCATION: 0402 <well>  
REPORT DATE: 1/31/2005 9:05 am

PARAMETER	UNITS	SAMPLE:		DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS:			DETECTION LIMIT	UN- CERTAINTY
		DATE	ID			LAB	DATA	QA		
Alkalinity, Total (As CaCO3	mg/L	10/15/2004	0001	17.00 - 17.00	554	F	#		-	-
Ammonia Total as N	mg/L	10/15/2004	0001	17.00 - 17.00	310	F	#		10	-
	mg/L	10/15/2004	0002	17.00 - 17.00	270	F	#		10	-
Chloride	mg/L	10/15/2004	0001	17.00 - 17.00	1300	F	#		40	-
	mg/L	10/15/2004	0002	17.00 - 17.00	1200	F	#		40	-
Oxidation Reduction Potent	mV	10/15/2004	N001	17.00 - 17.00	195	F	#		-	-
pH	s.u.	10/15/2004	N001	17.00 - 17.00	6.88	F	#		-	-
Specific Conductance	umhos/cm	10/15/2004	N001	17.00 - 17.00	12678	F	#		-	-
Sulfate	mg/L	10/15/2004	0001	17.00 - 17.00	4700	F	#		100	-
	mg/L	10/15/2004	0002	17.00 - 17.00	4600	F	#		50	-
Temperature	C	10/15/2004	N001	17.00 - 17.00	15.11	F	#		-	-
Total Dissolved Solids	mg/L	10/15/2004	0001	17.00 - 17.00	8800	F	#		200	-
	mg/L	10/15/2004	0002	17.00 - 17.00	8600	F	#		200	-
Turbidity	NTU	10/15/2004	N001	17.00 - 17.00	8.27	F	#		-	-
Uranium	mg/L	10/15/2004	0001	17.00 - 17.00	1.300	JF	#		0.00083	-
	mg/L	10/15/2004	0002	17.00 - 17.00	1.400	JF	#		0.00083	-

GENERAL WATER QUALITY DATA BY LOCATION (USEE105) FOR SITE MOA01, Moab Site

LOCATION: 0402 <well>

REPORT DATE: 1/31/2005 9:05 am

PARAMETER	UNITS	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB DATA QA	DETECTION LIMIT	UN- CERTAINTY
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RECORDS: SELECTED FROM USEE100 WHERE site\_code='MOA01' AND location\_code  
in('0236','0401','0402','0580','0582','0583','0585','0586','0587','0590','0591','0593','0549','0405','0488','0493','0495','0497','0581','0584','0240') AND (data\_validation\_qualifiers IS NULL OR  
data\_validation\_qualifiers NOT LIKE '%R%' AND data\_validation\_qualifiers NOT LIKE '%X%') AND DATE\_SAMPLED between #10/14/2004# and #10/19/2004#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- \* Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- > Result above upper detection limit.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- C Pesticide result confirmed by GC-MS.
- D Analyte determined in diluted sample.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- J Estimated
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compound (TIC).
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.

DATA QUALIFIERS:

- |  |  |                    |
|--|--|--------------------|
| F Low flow sampling method used.                     | G Possible grout contamination, pH > 9.        | J Estimated value. |
| L Less than 3 bore volumes purged prior to sampling. | Q Qualitative result due to sampling technique | R Unusable result. |
| U Parameter analyzed for but was not detected.       | X Location is undefined.                       |                    |

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GENERAL WATER QUALITY DATA BY LOCATION (USEE105) FOR SITE MOA01, Moab Site  
LOCATION: 0405 <well>  
REPORT DATE: 1/31/2005 9:05 am

PARAMETER	UNITS	SAMPLE:		DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS:			DETECTION LIMIT	UN- CERTAINTY
		DATE	ID			LAB	DATA	QA		
Alkalinity, Total (As CaCO3	mg/L	10/15/2004	0001	18.00 - 18.00	700	F	#		-	-
Ammonia Total as N	mg/L	10/15/2004	0001	18.00 - 18.00	400	F	#		50	-
Chloride	mg/L	10/15/2004	0001	18.00 - 18.00	1300	F	#		40	-
Oxidation Reduction Potent	mV	10/15/2004	N001	18.00 - 18.00	180	F	#		-	-
pH	s.u.	10/15/2004	N001	18.00 - 18.00	6.74	F	#		-	-
Specific Conductance	umhos/cm	10/15/2004	N001	18.00 - 18.00	15730	F	#		-	-
Sulfate	mg/L	10/15/2004	0001	18.00 - 18.00	7300	F	#		100	-
Temperature	C	10/15/2004	N001	18.00 - 18.00	18.23	F	#		-	-
Total Dissolved Solids	mg/L	10/15/2004	0001	18.00 - 18.00	13000	F	#		200	-
Turbidity	NTU	10/15/2004	N001	18.00 - 18.00	6.71	F	#		-	-
Uranium	mg/L	10/15/2004	0001	18.00 - 18.00	1.500	JF	#		0.00083	-



GENERAL WATER QUALITY DATA BY LOCATION (USEE105) FOR SITE MOA01, Moab Site  
 LOCATION: 0405 <well>  
 REPORT DATE: 1/31/2005 9:05 am

PARAMETER	UNITS	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB DATA QA	DETECTION LIMIT	UN- CERTAINTY
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RECORDS: SELECTED FROM USEE100 WHERE site\_code='MOA01' AND location\_code  
 in('0236','0401','0402','0580','0582','0583','0585','0586','0587','0590','0591','0593','0549','0405','0488','0493','0495','0497','0581','0584','0240') AND (data\_validation\_qualifiers IS NULL OR  
 data\_validation\_qualifiers NOT LIKE '%R%' AND data\_validation\_qualifiers NOT LIKE '%X%') AND DATE\_SAMPLED between #10/14/2004# and #10/19/2004#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- \* Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- > Result above upper detection limit.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- C Pesticide result confirmed by GC-MS.
- D Analyte determined in diluted sample.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- J Estimated
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compound (TIC).
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.

DATA QUALIFIERS:

- |  |  |                    |
|--|--|--------------------|
| F Low flow sampling method used.                     | G Possible grout contamination, pH > 9.        | J Estimated value. |
| L Less than 3 bore volumes purged prior to sampling. | Q Qualitative result due to sampling technique | R Unusable result. |
| U Parameter analyzed for but was not detected.       | X Location is undefined.                       |                    |

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GENERAL WATER QUALITY DATA BY LOCATION (USEE105) FOR SITE MOA01, Moab Site  
LOCATION: 0488 <well>  
REPORT DATE: 1/31/2005 9:05 am

PARAMETER	UNITS	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB DATA QA	DETECTION LIMIT	UN- CERTAINTY
Alkalinity, Total (As CaCO3	mg/L	10/15/2004	0001	33.00 - 33.00	874	F #	-	-
Ammonia Total as N	mg/L	10/15/2004	0001	33.00 - 33.00	800	F #	50	-
Chloride	mg/L	10/15/2004	0001	33.00 - 33.00	1600	F #	40	-
Oxidation Reduction Potent	mV	10/15/2004	N001	33.00 - 33.00	190	F #	-	-
pH	s.u.	10/15/2004	N001	33.00 - 33.00	6.90	F #	-	-
Specific Conductance	umhos/cm	10/15/2004	N001	33.00 - 33.00	21710	F #	-	-
Sulfate	mg/L	10/15/2004	0001	33.00 - 33.00	11000	F #	100	-
Temperature	C	10/15/2004	N001	33.00 - 33.00	19.74	F #	-	-
Total Dissolved Solids	mg/L	10/15/2004	0001	33.00 - 33.00	18000	F #	200	-
Turbidity	NTU	10/15/2004	N001	33.00 - 33.00	2.30	F #	-	-
Uranium	mg/L	10/15/2004	0001	33.00 - 33.00	2.600	JF #	0.00083	-

GENERAL WATER QUALITY DATA BY LOCATION (USEE105) FOR SITE MOA01, Moab Site  
 LOCATION: 0488 <well>  
 REPORT DATE: 1/31/2005 9:05 am

PARAMETER	UNITS	SAMPLE:		DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS:			DETECTION LIMIT	UN- CERTAINTY
		DATE	ID			LAB	DATA	QA		

RECORDS: SELECTED FROM USEE100 WHERE site\_code='MOA01' AND location\_code  
 in('0236','0401','0402','0580','0582','0583','0585','0586','0587','0590','0591','0593','0549','0405','0488','0493','0495','0497','0581','0584','0240') AND (data\_validation\_qualifiers IS NULL OR  
 data\_validation\_qualifiers NOT LIKE '%R%' AND data\_validation\_qualifiers NOT LIKE '%X%') AND DATE\_SAMPLED between #10/14/2004# and #10/19/2004#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- \* Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- > Result above upper detection limit.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- C Pesticide result confirmed by GC-MS.
- D Analyte determined in diluted sample.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- J Estimated
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compound (TIC).
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.

DATA QUALIFIERS:

- |  |  |                    |
|--|--|--------------------|
| F Low flow sampling method used.                     | G Possible grout contamination, pH > 9.        | J Estimated value. |
| L Less than 3 bore volumes purged prior to sampling. | Q Qualitative result due to sampling technique | R Unusable result. |
| U Parameter analyzed for but was not detected.       | X Location is undefined.                       |                    |

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GENERAL WATER QUALITY DATA BY LOCATION (USEE105) FOR SITE MOA01, Moab Site

LOCATION: 0493 <well>

REPORT DATE: 1/31/2005 9:05 am

PARAMETER	UNITS	SAMPLE:		DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS:			DETECTION LIMIT	UN- CERTAINTY
		DATE	ID			LAB	DATA	QA		
Alkalinity, Total (As CaCO <sub>3</sub> )	mg/L	10/15/2004	0001	54.00 - 54.00	1200	F	#		-	-
	mg/L	10/15/2004	0001	46.00 - 46.00	1156	F	#		-	-
Ammonia Total as N	mg/L	10/15/2004	0001	46.00 - 46.00	1000	F	#		50	-
	mg/L	10/15/2004	0001	54.00 - 54.00	1000	F	#		50	-
Chloride	mg/L	10/15/2004	0001	54.00 - 54.00	8500	F	#		100	-
	mg/L	10/15/2004	0001	46.00 - 46.00	8800	F	#		100	-
Oxidation Reduction Potent	mV	10/15/2004	N001	46.00 - 46.00	178	F	#		-	-
	mV	10/15/2004	N001	54.00 - 54.00	180	F	#		-	-
pH	s.u.	10/15/2004	N001	46.00 - 46.00	6.86	F	#		-	-
	s.u.	10/15/2004	N001	54.00 - 54.00	6.82	F	#		-	-
Specific Conductance	umhos/cm	10/15/2004	N001	46.00 - 46.00	36841	F	#		-	-
	umhos/cm	10/15/2004	N001	54.00 - 54.00	42249	F	#		-	-
Sulfate	mg/L	10/15/2004	0001	46.00 - 46.00	18000	F	#		250	-
	mg/L	10/15/2004	0001	54.00 - 54.00	16000	F	#		250	-
Temperature	C	10/15/2004	N001	46.00 - 46.00	16.98	F	#		-	-
	C	10/15/2004	N001	54.00 - 54.00	17.27	F	#		-	-
Total Dissolved Solids	mg/L	10/15/2004	0001	54.00 - 54.00	36000	F	#		400	-
	mg/L	10/15/2004	0001	46.00 - 46.00	35000	F	#		400	-
Turbidity	NTU	10/15/2004	N001	46.00 - 46.00	2.18	F	#		-	-
	NTU	10/15/2004	N001	54.00 - 54.00	2.95	F	#		-	-
Uranium	mg/L	10/15/2004	0001	46.00 - 46.00	3.200	JF	#		0.00083	-
	mg/L	10/15/2004	0001	54.00 - 54.00	3.400	JF	#		0.00083	-

GENERAL WATER QUALITY DATA BY LOCATION (USEE105) FOR SITE MOA01, Moab Site  
 LOCATION: 0493 <well>  
 REPORT DATE: 1/31/2005 9:05 am

PARAMETER	UNITS	SAMPLE:		DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS:			DETECTION LIMIT	UN- CERTAINTY
		DATE	ID			LAB	DATA	QA		

RECORDS: SELECTED FROM USEE100 WHERE site\_code='MOA01' AND location\_code  
 in('0236','0401','0402','0580','0582','0583','0585','0586','0587','0590','0591','0593','0549','0405','0488','0493','0495','0497','0581','0584','0240') AND (data\_validation\_qualifiers IS NULL OR  
 data\_validation\_qualifiers NOT LIKE '%R%' AND data\_validation\_qualifiers NOT LIKE '%X%' ) AND DATE\_SAMPLED between #10/14/2004# and #10/19/2004#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- \* Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- > Result above upper detection limit.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- C Pesticide result confirmed by GC-MS.
- D Analyte determined in diluted sample.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- J Estimated
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compound (TIC).
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.

DATA QUALIFIERS:

- |  |  |                    |
|--|--|--------------------|
| F Low flow sampling method used.                     | G Possible grout contamination, pH > 9.        | J Estimated value. |
| L Less than 3 bore volumes purged prior to sampling. | Q Qualitative result due to sampling technique | R Unusable result. |
| U Parameter analyzed for but was not detected.       | X Location is undefined.                       |                    |

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GENERAL WATER QUALITY DATA BY LOCATION (USEE105) FOR SITE MOA01, Moab Site  
LOCATION: 0495 <well, piezometer>  
REPORT DATE: 1/31/2005 9:05 am

PARAMETER	UNITS	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB DATA QA	DETECTION LIMIT	UN- CERTAINTY
Alkalinity, Total (As CaCO3	mg/L	10/19/2004	0001	4.19 - 4.19	728	QF #	-	-
Ammonia Total as N	mg/L	10/19/2004	0001	4.19 - 4.19	400	QF #	50	-
Chloride	mg/L	10/19/2004	0001	4.19 - 4.19	1400	QF #	40	-
Oxidation Reduction Potent	mV	10/19/2004	N001	4.19 - 4.19	-221	QF #	-	-
pH	s.u.	10/19/2004	N001	4.19 - 4.19	6.80	QF #	-	-
Specific Conductance	umhos/cm	10/19/2004	N001	4.19 - 4.19	15244	QF #	-	-
Sulfate	mg/L	10/19/2004	0001	4.19 - 4.19	7600	QF #	100	-
Temperature	C	10/19/2004	N001	4.19 - 4.19	15.88	QF #	-	-
Total Dissolved Solids	mg/L	10/19/2004	0001	4.19 - 4.19	13000	QF #	400	-
Turbidity	NTU	10/19/2004	N001	4.19 - 4.19	1000	> QF #	-	-
Uranium	mg/L	10/19/2004	0001	4.19 - 4.19	1.300	JQF #	0.00083	-

GENERAL WATER QUALITY DATA BY LOCATION (USEE105) FOR SITE MOA01, Moab Site  
 LOCATION: 0495 <well, piezometer>  
 REPORT DATE: 1/31/2005 9:05 am

PARAMETER	UNITS	SAMPLE:		DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS:		DETECTION LIMIT	UN- CERTAINTY
		DATE	ID			LAB	DATA QA		

RECORDS: SELECTED FROM USEE100 WHERE site\_code='MOA01' AND location\_code  
 in('0236','0401','0402','0580','0582','0583','0585','0586','0587','0590','0591','0593','0549','0405','0488','0493','0495','0497','0581','0584','0240') AND (data\_validation\_qualifiers IS NULL OR  
 data\_validation\_qualifiers NOT LIKE '%R%' AND data\_validation\_qualifiers NOT LIKE '%X%' ) AND DATE\_SAMPLED between #10/14/2004# and #10/19/2004#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- > Result above upper detection limit.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- C Pesticide result confirmed by GC-MS.
- D Analyte determined in diluted sample.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- J Estimated
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compound (TIC).
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.

DATA QUALIFIERS:

- |  |  |                    |
|--|--|--------------------|
| F Low flow sampling method used.                     | G Possible grout contamination, pH > 9.        | J Estimated value. |
| L Less than 3 bore volumes purged prior to sampling. | Q Qualitative result due to sampling technique | R Unusable result. |
| U Parameter analyzed for but was not detected.       | X Location is undefined.                       |                    |

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GENERAL WATER QUALITY DATA BY LOCATION (USEE105) FOR SITE MOA01, Moab Site  
LOCATION: 0497 <well, piezometer>  
REPORT DATE: 1/31/2005 9:05 am

PARAMETER	UNITS	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB DATA QA	DETECTION LIMIT	UN- CERTAINTY
Alkalinity, Total (As CaCO3	mg/L	10/19/2004	0001	4.12 - 4.12	708	QF #	-	-
Ammonia Total as N	mg/L	10/19/2004	0001	4.12 - 4.12	430	QF #	50	-
Chloride	mg/L	10/19/2004	0001	4.12 - 4.12	1500	QF #	40	-
Oxidation Reduction Potent	mV	10/19/2004	N001	4.12 - 4.12	-258	QF #	-	-
pH	s.u.	10/19/2004	N001	4.12 - 4.12	8.51	QF #	-	-
Specific Conductance	umhos/cm	10/19/2004	N001	4.12 - 4.12	14510	QF #	-	-
Sulfate	mg/L	10/19/2004	0001	4.12 - 4.12	7300	QF #	100	-
Temperature	C	10/19/2004	N001	4.12 - 4.12	14.43	QF #	-	-
Total Dissolved Solids	mg/L	10/19/2004	0001	4.12 - 4.12	13000	QF #	400	-
Turbidity	NTU	10/19/2004	N001	4.12 - 4.12	217	QF #	-	-
Uranium	mg/L	10/19/2004	0001	4.12 - 4.12	0.840	JQF #	8.3E-05	-



GENERAL WATER QUALITY DATA BY LOCATION (USEE105) FOR SITE MOA01, Moab Site  
 LOCATION: 0497 <well, piezometer>  
 REPORT DATE: 1/31/2005 9:05 am

PARAMETER	UNITS	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB DATA QA	DETECTION LIMIT	UN- CERTAINTY
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RECORDS: SELECTED FROM USEE100 WHERE site\_code='MOA01' AND location\_code  
 in('0236','0401','0402','0580','0582','0583','0585','0586','0587','0590','0591','0593','0549','0405','0488','0493','0495','0497','0581','0584','0240') AND (data\_validation\_qualifiers IS NULL OR  
 data\_validation\_qualifiers NOT LIKE '%R%' AND data\_validation\_qualifiers NOT LIKE '%X%' ) AND DATE\_SAMPLED between #10/14/2004# and #10/19/2004#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- \* Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- > Result above upper detection limit.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- C Pesticide result confirmed by GC-MS.
- D Analyte determined in diluted sample.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- J Estimated
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compound (TIC).
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.

DATA QUALIFIERS:

- |  |  |                    |
|--|--|--------------------|
| F Low flow sampling method used.                     | G Possible grout contamination, pH > 9.        | J Estimated value. |
| L Less than 3 bore volumes purged prior to sampling. | Q Qualitative result due to sampling technique | R Unusable result. |
| U Parameter analyzed for but was not detected.       | X Location is undefined.                       |                    |

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GENERAL WATER QUALITY DATA BY LOCATION (USEE105) FOR SITE MOA01, Moab Site

LOCATION: 0549 <injection system, injection system hydrant> Clean water, from a pond, that is being pumped through a line to the hydrant and used for injecting water.

REPORT DATE: 1/31/2005 9:05 am

PARAMETER	UNITS	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB DATA QA	DETECTION LIMIT	UN- CERTAINTY
Alkalinity, Total (As CaCO <sub>3</sub> )	mg/L	10/15/2004	0001	0.00 - 0.00	158		# -	-
Ammonia Total as N	mg/L	10/15/2004	0001	0.00 - 0.00	0.1	U	# 0.1	-
Chloride	mg/L	10/15/2004	0001	0.00 - 0.00	86		# 2	-
Oxidation Reduction Potent	mV	10/15/2004	N001	0.00 - 0.00	49		# -	-
pH	s.u.	10/15/2004	N001	0.00 - 0.00	7.64		# -	-
Specific Conductance	umhos/cm	10/15/2004	N001	0.00 - 0.00	1163		# -	-
Sulfate	mg/L	10/15/2004	0001	0.00 - 0.00	310		# 5	-
Temperature	C	10/15/2004	N001	0.00 - 0.00	14.01		# -	-
Total Dissolved Solids	mg/L	10/15/2004	0001	0.00 - 0.00	770		# 20	-
Turbidity	NTU	10/15/2004	N001	0.00 - 0.00	36.1		# -	-
Uranium	mg/L	10/15/2004	0001	0.00 - 0.00	0.0083	J	# 8.3E-06	-

GENERAL WATER QUALITY DATA BY LOCATION (USEE105) FOR SITE MOA01, Moab Site

LOCATION: 0549 <injection system, injection system hydrant> Clean water, from a pond, that is being pumped through a line to the hydrant and used for injecting water.

REPORT DATE: 1/31/2005 9:05 am

PARAMETER	UNITS	SAMPLE:		DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS:			DETECTION LIMIT	UN- CERTAINTY
		DATE	ID			LAB	DATA	QA		

RECORDS: SELECTED FROM USEE100 WHERE site\_code='MOA01' AND location\_code  
in('0236','0401','0402','0580','0582','0583','0585','0586','0587','0590','0591','0593','0549','0405','0488','0493','0495','0497','0581','0584','0240') AND (data\_validation\_qualifiers IS NULL OR  
data\_validation\_qualifiers NOT LIKE '%R%' AND data\_validation\_qualifiers NOT LIKE '%X%' ) AND DATE\_SAMPLED between #10/14/2004# and #10/19/2004#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- \* Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- > Result above upper detection limit.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- C Pesticide result confirmed by GC-MS.
- D Analyte determined in diluted sample.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- J Estimated
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compound (TIC).
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.

DATA QUALIFIERS:

- |  |  |                    |
|--|--|--------------------|
| F Low flow sampling method used.                     | G Possible grout contamination, pH > 9.        | J Estimated value. |
| L Less than 3 bore volumes purged prior to sampling. | Q Qualitative result due to sampling technique | R Unusable result. |
| U Parameter analyzed for but was not detected.       | X Location is undefined.                       |                    |

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GENERAL WATER QUALITY DATA BY LOCATION (USEE105) FOR SITE MOA01, Moab Site  
LOCATION: 0580 <well>  
REPORT DATE: 1/31/2005 9:05 am

PARAMETER	UNITS	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB DATA QA	DETECTION LIMIT	UN- CERTAINTY
Ammonia Total as N	mg/L	10/15/2004	0001	18.00 - 18.00	47	F #	2	-
Chloride	mg/L	10/15/2004	0001	18.00 - 18.00	490	F #	20	-
Oxidation Reduction Potent	mV	10/15/2004	N001	18.00 - 18.00	178	F #	-	-
pH	s.u.	10/15/2004	N001	18.00 - 18.00	7.02	F #	-	-
Specific Conductance	umhos/cm	10/15/2004	N001	18.00 - 18.00	5933	F #	-	-
Sulfate	mg/L	10/15/2004	0001	18.00 - 18.00	2200	F #	50	-
Temperature	C	10/15/2004	N001	18.00 - 18.00	15.35	F #	-	-
Total Dissolved Solids	mg/L	10/15/2004	0001	18.00 - 18.00	4500	F #	80	-
Turbidity	NTU	10/15/2004	N001	18.00 - 18.00	4.21	F #	-	-
Uranium	mg/L	10/15/2004	0001	18.00 - 18.00	0.550	JF #	8.3E-05	-

GENERAL WATER QUALITY DATA BY LOCATION (USEE105) FOR SITE MOA01, Moab Site  
 LOCATION: 0580 <well>  
 REPORT DATE: 1/31/2005 9:05 am

PARAMETER	UNITS	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB DATA QA	DETECTION LIMIT	UN- CERTAINTY
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RECORDS: SELECTED FROM USEE100 WHERE site\_code='MOA01' AND location\_code  
 in('0236','0401','0402','0580','0582','0583','0585','0586','0587','0590','0591','0593','0549','0405','0488','0493','0495','0497','0581','0584','0240') AND (data\_validation\_qualifiers IS NULL OR  
 data\_validation\_qualifiers NOT LIKE '%R%' AND data\_validation\_qualifiers NOT LIKE '%X%' ) AND DATE\_SAMPLED between #10/14/2004# and #10/19/2004#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- \* Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- > Result above upper detection limit.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- C Pesticide result confirmed by GC-MS.
- D Analyte determined in diluted sample.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- J Estimated
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compound (TIC).
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.

DATA QUALIFIERS:

- |  |  |                    |
|--|--|--------------------|
| F Low flow sampling method used.                     | G Possible grout contamination, pH > 9.        | J Estimated value. |
| L Less than 3 bore volumes purged prior to sampling. | Q Qualitative result due to sampling technique | R Unusable result. |
| U Parameter analyzed for but was not detected.       | X Location is undefined.                       |                    |

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GENERAL WATER QUALITY DATA BY LOCATION (USEE105) FOR SITE MOA01, Moab Site  
LOCATION: 0582 <well>  
REPORT DATE: 1/31/2005 9:05 am

PARAMETER	UNITS	SAMPLE:		DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS:			DETECTION LIMIT	UN- CERTAINTY
		DATE	ID			LAB	DATA	QA		
Alkalinity, Total (As CaCO3	mg/L	10/14/2004	0001	18.00 - 18.00	704	F	#		-	-
Ammonia Total as N	mg/L	10/14/2004	0001	18.00 - 18.00	560	F	#		50	-
Chloride	mg/L	10/14/2004	0001	18.00 - 18.00	3300	F	#		100	-
Oxidation Reduction Potent	mV	10/14/2004	N001	18.00 - 18.00	195	F	#		-	-
pH	s.u.	10/14/2004	N001	18.00 - 18.00	6.83	F	#		-	-
Specific Conductance	umhos/cm	10/14/2004	N001	18.00 - 18.00	22723	F	#		-	-
Sulfate	mg/L	10/14/2004	0001	18.00 - 18.00	8100	F	#		250	-
Temperature	C	10/14/2004	N001	18.00 - 18.00	15.71	F	#		-	-
Total Dissolved Solids	mg/L	10/14/2004	0001	18.00 - 18.00	16000	F	#		400	-
Turbidity	NTU	10/14/2004	N001	18.00 - 18.00	8.14	F	#		-	-
Uranium	mg/L	10/14/2004	0001	18.00 - 18.00	2.300	JF	#		0.00083	-

GENERAL WATER QUALITY DATA BY LOCATION (USEE105) FOR SITE MOA01, Moab Site  
 LOCATION: 0582 <well>  
 REPORT DATE: 1/31/2005 9:05 am

PARAMETER	UNITS	SAMPLE:		DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS:			DETECTION LIMIT	UN- CERTAINTY
		DATE	ID			LAB	DATA	QA		

RECORDS: SELECTED FROM USEE100 WHERE site\_code='MOA01' AND location\_code  
 in('0236','0401','0402','0580','0582','0583','0585','0586','0587','0590','0591','0593','0549','0405','0488','0493','0495','0497','0581','0584','0240') AND (data\_validation\_qualifiers IS NULL OR  
 data\_validation\_qualifiers NOT LIKE '%R%' AND data\_validation\_qualifiers NOT LIKE '%X%' ) AND DATE\_SAMPLED between #10/14/2004# and #10/19/2004#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- \* Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- > Result above upper detection limit.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- C Pesticide result confirmed by GC-MS.
- D Analyte determined in diluted sample.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- J Estimated
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compound (TIC).
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.

DATA QUALIFIERS:

- |  |  |                    |
|--|--|--------------------|
| F Low flow sampling method used.                     | G Possible grout contamination, pH > 9.        | J Estimated value. |
| L Less than 3 bore volumes purged prior to sampling. | Q Qualitative result due to sampling technique | R Unusable result. |
| U Parameter analyzed for but was not detected.       | X Location is undefined.                       |                    |

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GENERAL WATER QUALITY DATA BY LOCATION (USEE105) FOR SITE MOA01, Moab Site

LOCATION: 0583 <well>

REPORT DATE: 1/31/2005 9:05 am

PARAMETER	UNITS	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB DATA QA	DETECTION LIMIT	UN- CERTAINTY
Alkalinity, Total (As CaCO3	mg/L	10/14/2004	0001	18.00 - 18.00	834	F #	-	-
Ammonia Total as N	mg/L	10/14/2004	0001	18.00 - 18.00	600	F #	50	-
Chloride	mg/L	10/14/2004	0001	18.00 - 18.00	2000	F #	40	-
Oxidation Reduction Potent	mV	10/14/2004	N001	18.00 - 18.00	197	F #	-	-
pH	s.u.	10/14/2004	N001	18.00 - 18.00	6.76	F #	-	-
Specific Conductance	umhos/cm	10/14/2004	N001	18.00 - 18.00	18548	F #	-	-
Sulfate	mg/L	10/14/2004	0001	18.00 - 18.00	8400	F #	100	-
Temperature	C	10/14/2004	N001	18.00 - 18.00	16.61	F #	-	-
Total Dissolved Solids	mg/L	10/14/2004	0001	18.00 - 18.00	15000	F #	400	-
Turbidity	NTU	10/14/2004	N001	18.00 - 18.00	8.62	F #	-	-
Uranium	mg/L	10/14/2004	0001	18.00 - 18.00	2.600	E JF #	0.00083	-



GENERAL WATER QUALITY DATA BY LOCATION (USEE105) FOR SITE MOA01, Moab Site

LOCATION: 0583 <well>

REPORT DATE: 1/31/2005 9:05 am

PARAMETER	UNITS	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB DATA QA	DETECTION LIMIT	UN- CERTAINTY
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RECORDS: SELECTED FROM USEE100 WHERE site\_code='MOA01' AND location\_code  
in('0236','0401','0402','0580','0582','0583','0585','0586','0587','0590','0591','0593','0549','0405','0488','0493','0495','0497','0581','0584','0240') AND (data\_validation\_qualifiers IS NULL OR  
data\_validation\_qualifiers NOT LIKE '%R%' AND data\_validation\_qualifiers NOT LIKE '%X%' ) AND DATE\_SAMPLED between #10/14/2004# and #10/19/2004#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- \* Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- > Result above upper detection limit.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- C Pesticide result confirmed by GC-MS.
- D Analyte determined in diluted sample.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- J Estimated
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compound (TIC).
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.

DATA QUALIFIERS:

- |  |  |                    |
|--|--|--------------------|
| F Low flow sampling method used.                     | G Possible grout contamination, pH > 9.        | J Estimated value. |
| L Less than 3 bore volumes purged prior to sampling. | Q Qualitative result due to sampling technique | R Unusable result. |
| U Parameter analyzed for but was not detected.       | X Location is undefined.                       |                    |

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GENERAL WATER QUALITY DATA BY LOCATION (USEE105) FOR SITE MOA01, Moab Site  
LOCATION: 0585 <well>  
REPORT DATE: 1/31/2005 9:05 am

PARAMETER	UNITS	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB DATA QA	DETECTION LIMIT	UN- CERTAINTY
Alkalinity, Total (As CaCO3	mg/L	10/14/2004	0001	18.00 - 18.00	376	F #	-	-
Ammonia Total as N	mg/L	10/14/2004	0001	18.00 - 18.00	170	F #	10	-
Chloride	mg/L	10/14/2004	0001	18.00 - 18.00	560	F #	20	-
Oxidation Reduction Potent	mV	10/14/2004	N001	18.00 - 18.00	179	F #	-	-
pH	s.u.	10/14/2004	N001	18.00 - 18.00	7.12	F #	-	-
Specific Conductance	umhos/cm	10/14/2004	N001	18.00 - 18.00	6620	F #	-	-
Sulfate	mg/L	10/14/2004	0001	18.00 - 18.00	2400	F #	50	-
Temperature	C	10/14/2004	N001	18.00 - 18.00	16.10	F #	-	-
Total Dissolved Solids	mg/L	10/14/2004	0001	18.00 - 18.00	4300	F #	80	-
Turbidity	NTU	10/14/2004	N001	18.00 - 18.00	2.04	F #	-	-
Uranium	mg/L	10/14/2004	0001	18.00 - 18.00	0.620	JF #	0.00083	-

GENERAL WATER QUALITY DATA BY LOCATION (USEE105) FOR SITE MOA01, Moab Site  
 LOCATION: 0585 <well>  
 REPORT DATE: 1/31/2005 9:05 am

PARAMETER	UNITS	SAMPLE:		DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS:		DETECTION LIMIT	UN- CERTAINTY
		DATE	ID			LAB	DATA QA		

RECORDS: SELECTED FROM USEE100 WHERE site\_code='MOA01' AND location\_code  
 in('0236','0401','0402','0580','0582','0583','0585','0586','0587','0590','0591','0593','0549','0405','0488','0493','0495','0497','0581','0584','0240') AND (data\_validation\_qualifiers IS NULL OR  
 data\_validation\_qualifiers NOT LIKE '%R%' AND data\_validation\_qualifiers NOT LIKE '%X%' ) AND DATE\_SAMPLED between #10/14/2004# and #10/19/2004#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- \* Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- > Result above upper detection limit.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- C Pesticide result confirmed by GC-MS.
- D Analyte determined in diluted sample.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- J Estimated
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compound (TIC).
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.

DATA QUALIFIERS:

- |  |  |                    |
|--|--|--------------------|
| F Low flow sampling method used.                     | G Possible grout contamination, pH > 9.        | J Estimated value. |
| L Less than 3 bore volumes purged prior to sampling. | Q Qualitative result due to sampling technique | R Unusable result. |
| U Parameter analyzed for but was not detected.       | X Location is undefined.                       |                    |

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GENERAL WATER QUALITY DATA BY LOCATION (USEE105) FOR SITE MOA01, Moab Site  
LOCATION: 0586 <well>  
REPORT DATE: 1/31/2005 9:05 am

PARAMETER	UNITS	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB DATA QA	DETECTION LIMIT	UN-CERTAINTY
Alkalinity, Total (As CaCO3	mg/L	10/15/2004	0001	18.00 - 18.00	332	F #	-	-
Ammonia Total as N	mg/L	10/15/2004	0001	18.00 - 18.00	160	F #	5	-
Chloride	mg/L	10/15/2004	0001	18.00 - 18.00	300	F #	20	-
Oxidation Reduction Potent	mV	10/15/2004	N001	18.00 - 18.00	168	F #	-	-
pH	s.u.	10/15/2004	N001	18.00 - 18.00	7.43	F #	-	-
Specific Conductance	umhos/cm	10/15/2004	N001	18.00 - 18.00	4111	F #	-	-
Sulfate	mg/L	10/15/2004	0001	18.00 - 18.00	1300	F #	50	-
Temperature	C	10/15/2004	N001	18.00 - 18.00	15.32	F #	-	-
Total Dissolved Solids	mg/L	10/15/2004	0001	18.00 - 18.00	2400	F #	80	-
Turbidity	NTU	10/15/2004	N001	18.00 - 18.00	9.73	F #	-	-
Uranium	mg/L	10/15/2004	0001	18.00 - 18.00	0.360	JF #	8.3E-05	-

GENERAL WATER QUALITY DATA BY LOCATION (USEE105) FOR SITE MOA01, Moab Site

LOCATION: 0586 <well>

REPORT DATE: 1/31/2005 9:05 am

PARAMETER	UNITS	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB DATA QA	DETECTION LIMIT	UN- CERTAINTY
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RECORDS: SELECTED FROM USEE100 WHERE site\_code='MOA01' AND location\_code  
in('0236','0401','0402','0580','0582','0583','0585','0586','0587','0590','0591','0593','0549','0405','0488','0493','0495','0497','0581','0584','0240') AND (data\_validation\_qualifiers IS NULL OR  
data\_validation\_qualifiers NOT LIKE '%R%' AND data\_validation\_qualifiers NOT LIKE '%X%' ) AND DATE\_SAMPLED between #10/14/2004# and #10/19/2004#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- \* Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- > Result above upper detection limit.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- C Pesticide result confirmed by GC-MS.
- D Analyte determined in diluted sample.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- J Estimated
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compound (TIC).
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.

DATA QUALIFIERS:

- |  |  |                    |
|--|--|--------------------|
| F Low flow sampling method used.                     | G Possible grout contamination, pH > 9.        | J Estimated value. |
| L Less than 3 bore volumes purged prior to sampling. | Q Qualitative result due to sampling technique | R Unusable result. |
| U Parameter analyzed for but was not detected.       | X Location is undefined.                       |                    |

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GENERAL WATER QUALITY DATA BY LOCATION (USEE105) FOR SITE MOA01, Moab Site  
LOCATION: 0587 <well>  
REPORT DATE: 1/31/2005 9:05 am

PARAMETER	UNITS	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB DATA QA	DETECTION LIMIT	UN- CERTAINTY
Alkalinity, Total (As CaCO3	mg/L	10/14/2004	0001	18.00 - 18.00	654	F #	-	-
Ammonia Total as N	mg/L	10/14/2004	0001	18.00 - 18.00	290	F #	10	-
Chloride	mg/L	10/14/2004	0001	18.00 - 18.00	1600	F #	40	-
Oxidation Reduction Potent	mV	10/14/2004	N001	18.00 - 18.00	191	F #	-	-
pH	s.u.	10/14/2004	N001	18.00 - 18.00	6.78	F #	-	-
Specific Conductance	umhos/cm	10/14/2004	N001	18.00 - 18.00	15105	F #	-	-
Sulfate	mg/L	10/14/2004	0001	18.00 - 18.00	5500	F #	100	-
Temperature	C	10/14/2004	N001	18.00 - 18.00	16.42	F #	-	-
Total Dissolved Solids	mg/L	10/14/2004	0001	18.00 - 18.00	11000	F #	200	-
Turbidity	NTU	10/14/2004	N001	18.00 - 18.00	6.48	F #	-	-
Uranium	mg/L	10/14/2004	0001	18.00 - 18.00	1.700	E JF #	0.00083	-

GENERAL WATER QUALITY DATA BY LOCATION (USEE105) FOR SITE MOA01, Moab Site  
 LOCATION: 0587 <well>  
 REPORT DATE: 1/31/2005 9:05 am

PARAMETER	UNITS	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB DATA QA	DETECTION LIMIT	UN- CERTAINTY
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RECORDS: SELECTED FROM USEE100 WHERE site\_code='MOA01' AND location\_code  
 in('0236','0401','0402','0580','0582','0583','0585','0586','0587','0590','0591','0593','0549','0405','0488','0493','0495','0497','0581','0584','0240') AND (data\_validation\_qualifiers IS NULL OR  
 data\_validation\_qualifiers NOT LIKE '%R%' AND data\_validation\_qualifiers NOT LIKE '%X%' ) AND DATE\_SAMPLED between #10/14/2004# and #10/19/2004#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- \* Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- > Result above upper detection limit.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- C Pesticide result confirmed by GC-MS.
- D Analyte determined in diluted sample.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- J Estimated
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compound (TIC).
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.

DATA QUALIFIERS:

- |  |  |                    |
|--|--|--------------------|
| F Low flow sampling method used.                     | G Possible grout contamination, pH > 9.        | J Estimated value. |
| L Less than 3 bore volumes purged prior to sampling. | Q Qualitative result due to sampling technique | R Unusable result. |
| U Parameter analyzed for but was not detected.       | X Location is undefined.                       |                    |

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GENERAL WATER QUALITY DATA BY LOCATION (USEE105) FOR SITE MOA01, Moab Site  
 LOCATION: 0590 <well, piezometer>  
 REPORT DATE: 1/31/2005 9:05 am

PARAMETER	UNITS	SAMPLE:		DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS:		DETECTION LIMIT	UN- CERTAINTY
		DATE	ID			LAB	DATA QA		
Oxidation Reduction Potent	mV	10/19/2004	N001	1.08 - 1.08	-252		QF #	-	-
pH	s.u.	10/19/2004	N001	1.08 - 1.08	6.86		QF #	-	-
Specific Conductance	umhos/cm	10/19/2004	N001	1.08 - 1.08	22420		QF #	-	-
Temperature	C	10/19/2004	N001	1.08 - 1.08	14.22		QF #	-	-
Total Dissolved Solids	mg/L	10/19/2004	0001	1.08 - 1.08	18000		QF #	400	-
Turbidity	NTU	10/19/2004	N001	1.08 - 1.08	1000	>	QF #	-	-



GENERAL WATER QUALITY DATA BY LOCATION (USEE105) FOR SITE MOA01, Moab Site  
LOCATION: 0590 <well, piezometer>  
REPORT DATE: 1/31/2005 9:05 am

PARAMETER	UNITS	SAMPLE:		DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS:			DETECTION LIMIT	UN- CERTAINTY
		DATE	ID			LAB	DATA	QA		

RECORDS: SELECTED FROM USEE100 WHERE site\_code='MOA01' AND location\_code  
in('0236','0401','0402','0580','0582','0583','0585','0586','0587','0590','0591','0593','0549','0405','0488','0493','0495','0497','0581','0584','0240') AND (data\_validation\_qualifiers IS NULL OR  
data\_validation\_qualifiers NOT LIKE '%R%' AND data\_validation\_qualifiers NOT LIKE '%X%' ) AND DATE\_SAMPLED between #10/14/2004# and #10/19/2004#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- \* Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- > Result above upper detection limit.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- C Pesticide result confirmed by GC-MS.
- D Analyte determined in diluted sample.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- J Estimated
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compound (TIC).
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.

DATA QUALIFIERS:

- |  |  |                    |
|--|--|--------------------|
| F Low flow sampling method used.                     | G Possible grout contamination, pH > 9.        | J Estimated value. |
| L Less than 3 bore volumes purged prior to sampling. | Q Qualitative result due to sampling technique | R Unusable result. |
| U Parameter analyzed for but was not detected.       | X Location is undefined.                       |                    |

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GENERAL WATER QUALITY DATA BY LOCATION (USEE105) FOR SITE MOA01, Moab Site  
LOCATION: 0591 <well, piezometer>  
REPORT DATE: 1/31/2005 9:05 am

PARAMETER	UNITS	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB DATA QA	DETECTION LIMIT	UN- CERTAINTY
Alkalinity, Total (As CaCO3	mg/L	10/19/2004	0001	4.22 - 4.22	996	QF #	-	-
Ammonia Total as N	mg/L	10/19/2004	0001	4.22 - 4.22	1000	QF #	50	-
Chloride	mg/L	10/19/2004	0001	4.22 - 4.22	3300	QF #	100	-
Oxidation Reduction Potent	mV	10/19/2004	N001	4.22 - 4.22	-285	QF #	-	-
pH	s.u.	10/19/2004	N001	4.22 - 4.22	8.16	QF #	-	-
Specific Conductance	umhos/cm	10/19/2004	N001	4.22 - 4.22	28195	QF #	-	-
Sulfate	mg/L	10/19/2004	0001	4.22 - 4.22	13000	QF #	250	-
Temperature	C	10/19/2004	N001	4.22 - 4.22	14.53	QF #	-	-
Total Dissolved Solids	mg/L	10/19/2004	0001	4.22 - 4.22	23000	QF #	400	-
Turbidity	NTU	10/19/2004	N001	4.22 - 4.22	720	QF #	-	-
Uranium	mg/L	10/19/2004	0001	4.22 - 4.22	2.500	JQF #	0.00083	-

GENERAL WATER QUALITY DATA BY LOCATION (USEE105) FOR SITE MOA01, Moab Site  
 LOCATION: 0591 <well, piezometer>  
 REPORT DATE: 1/31/2005 9:05 am

PARAMETER	UNITS	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB DATA QA	DETECTION LIMIT	UN- CERTAINTY
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RECORDS: SELECTED FROM USEE100 WHERE site\_code='MOA01' AND location\_code  
 in('0236','0401','0402','0580','0582','0583','0585','0586','0587','0590','0591','0593','0549','0405','0488','0493','0495','0497','0581','0584','0240') AND (data\_validation\_qualifiers IS NULL OR  
 data\_validation\_qualifiers NOT LIKE '%R%' AND data\_validation\_qualifiers NOT LIKE '%X%') AND DATE\_SAMPLED between #10/14/2004# and #10/19/2004#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- \* Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- > Result above upper detection limit.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- C Pesticide result confirmed by GC-MS.
- D Analyte determined in diluted sample.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- J Estimated
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compound (TIC).
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.

DATA QUALIFIERS:

- |  |  |                    |
|--|--|--------------------|
| F Low flow sampling method used.                     | G Possible grout contamination, pH > 9.        | J Estimated value. |
| L Less than 3 bore volumes purged prior to sampling. | Q Qualitative result due to sampling technique | R Unusable result. |
| U Parameter analyzed for but was not detected.       | X Location is undefined.                       |                    |

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

GENERAL WATER QUALITY DATA BY LOCATION (USEE105) FOR SITE MOA01, Moab Site  
LOCATION: 0593 <well, piezometer>  
REPORT DATE: 1/31/2005 9:05 am

PARAMETER	UNITS	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB DATA QA	DETECTION LIMIT	UN- CERTAINTY
Alkalinity, Total (As CaCO3	mg/L	10/19/2004	0001	4.13 - 4.13	868	F #	-	-
Ammonia Total as N	mg/L	10/19/2004	0001	4.13 - 4.13	750	F #	50	-
Chloride	mg/L	10/19/2004	0001	4.13 - 4.13	2900	F #	40	-
Oxidation Reduction Potent	mV	10/19/2004	N001	4.13 - 4.13	-69	F #	-	-
pH	s.u.	10/19/2004	N001	4.13 - 4.13	6.99	F #	-	-
Specific Conductance	umhos/cm	10/19/2004	N001	4.13 - 4.13	24414	F #	-	-
Sulfate	mg/L	10/19/2004	0001	4.13 - 4.13	11000	F #	100	-
Temperature	C	10/19/2004	N001	4.13 - 4.13	15.10	F #	-	-
Total Dissolved Solids	mg/L	10/19/2004	0001	4.13 - 4.13	20000	F #	400	-
Turbidity	NTU	10/19/2004	N001	4.13 - 4.13	12.5	F #	-	-
Uranium	mg/L	10/19/2004	0001	4.13 - 4.13	2.600	JF #	0.00083	-

GENERAL WATER QUALITY DATA BY LOCATION (USEE105) FOR SITE MOA01, Moab Site  
 LOCATION: 0593 <well, piezometer>  
 REPORT DATE: 1/31/2005 9:05 am

PARAMETER	UNITS	SAMPLE: DATE	ID	DEPTH RANGE (FT BLS)	RESULT	QUALIFIERS: LAB DATA QA	DETECTION LIMIT	UN- CERTAINTY
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RECORDS: SELECTED FROM USEE100 WHERE site\_code='MOA01' AND location\_code  
 in('0236','0401','0402','0580','0582','0583','0585','0586','0587','0590','0591','0593','0549','0405','0488','0493','0495','0497','0581','0584','0240') AND (data\_validation\_qualifiers IS NULL OR  
 data\_validation\_qualifiers NOT LIKE '%R%' AND data\_validation\_qualifiers NOT LIKE '%X%') AND DATE\_SAMPLED between #10/14/2004# and #10/19/2004#

SAMPLE ID CODES: 000X = Filtered sample (0.45 µm). N00X = Unfiltered sample. X = replicate number.

LAB QUALIFIERS:

- \* Replicate analysis not within control limits.
- + Correlation coefficient for MSA < 0.995.
- > Result above upper detection limit.
- A TIC is a suspected aldol-condensation product.
- B Inorganic: Result is between the IDL and CRDL. Organic: Analyte also found in method blank.
- C Pesticide result confirmed by GC-MS.
- D Analyte determined in diluted sample.
- E Inorganic: Estimate value because of interference, see case narrative. Organic: Analyte exceeded calibration range of the GC-MS.
- H Holding time expired, value suspect.
- I Increased detection limit due to required dilution.
- J Estimated
- M GFAA duplicate injection precision not met.
- N Inorganic or radiochemical: Spike sample recovery not within control limits. Organic: Tentatively identified compound (TIC).
- P > 25% difference in detected pesticide or Arochlor concentrations between 2 columns.
- S Result determined by method of standard addition (MSA).
- U Analytical result below detection limit.
- W Post-digestion spike outside control limits while sample absorbance < 50% of analytical spike absorbance.
- X Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Y Laboratory defined (USEPA CLP organic) qualifier, see case narrative.
- Z Laboratory defined (USEPA CLP organic) qualifier, see case narrative.

DATA QUALIFIERS:

- |  |  |                    |
|--|--|--------------------|
| F Low flow sampling method used.                     | G Possible grout contamination, pH > 9.        | J Estimated value. |
| L Less than 3 bore volumes purged prior to sampling. | Q Qualitative result due to sampling technique | R Unusable result. |
| U Parameter analyzed for but was not detected.       | X Location is undefined.                       |                    |

QA QUALIFIER: # = validated according to Quality Assurance guidelines.

## **Water Level Data**

STATIC WATER LEVELS (USEE700) FOR SITE MOA01, Moab Disposal Site  
REPORT DATE: 12/27/2004 11:20 am

LOCATION CODE	FLOW CODE	TOP OF CASING ELEVATION (FT)	MEASUREMENT		DEPTH FROM TOP OF CASING (FT)	WATER ELEVATION (FT)	WATER LEVEL FLAG
			DATE	TIME			
0401	O	3969.60	10/15/2004	09:53	15.63	3953.97	
0402	O	3968.63	10/15/2004	08:15	15.61	3953.02	
0403	O	3968.95	10/14/2004	13:23	16.75	3952.20	
0405	O	3968.47	10/15/2004	12:51	14.70	3953.77	
0407	O	3969.09	10/14/2004	13:51	17.51	3951.58	
0488		3968.48	10/15/2004	13:15	14.60	3953.88	
0493		3967.94	10/15/2004	12:29	14.36	3953.58	
0494		3959.27	10/19/2004	13:34		-	D
0495		3957.81	10/19/2004	11:27	3.99	3953.82	
0496		3957.48	10/19/2004	11:40	3.96	3953.52	
0497		3955.66	10/19/2004	11:46	1.84	3953.82	
0558		3968.79	10/14/2004	10:13	16.80	3951.99	
0559		3969.92	10/14/2004	10:52	17.97	3951.95	
0560		3968.77	10/14/2004	11:25	16.76	3952.01	
0561		3968.56	10/14/2004	11:55	16.75	3951.81	
0580		3969.32	10/15/2004	08:50	17.10	3952.22	
0581		3969.02	10/15/2004	10:37	16.23	3952.79	
0582		3969.65	10/14/2004	18:21	16.79	3952.86	
0583		3969.64	10/14/2004	16:37	16.53	3953.11	
0584		3969.13	10/15/2004	10:26	15.81	3953.32	
0585		3969.36	10/14/2004	17:54	15.82	3953.54	
0586		3969.20	10/15/2004	09:15	15.21	3953.99	
0587		3968.89	10/14/2004	17:22	15.72	3953.17	
0590		3956.70	10/19/2004	13:15	3.61	3953.09	
0591		3953.99	10/19/2004	13:25	0.80	3953.19	
0592		3956.36	10/19/2004	13:40	3.63	3952.73	
0593		3954.90	10/19/2004	13:45	1.79	3953.11	

RECORDS: SELECTED FROM USEE700 WHERE site\_code='MOA01' AND LOG\_DATE between #10/14/2004# and #10/20/2004#

FLOW CODES: O ON-SITE

WATER LEVEL FLAGS:  
D Dry

## **Attachment 2**

### **Trip Report**



DATE: January 18, 2005

TO: Ken Karp

FROM: Ken G. Pill

SUBJECT: Trip Report

**Site:** Moab – I.A. Configuration II Injection Test Midpoint Sampling, Baseline Area Sampling –  
REVISED

**Date of Sampling Event:** October 14, 15, and 19, 2004.

**Team Members:** Ken Pill, Sam Campbell, and Steve Hall

**Number of Locations Sampled:** Eight CF II observation wells (0401, 0402, 0580, 0582, 0583, 0585, 0586, and 0587), three piezometers (0590, 0591, and 0593), and the injection water (0549) were sampled as part of the CF II injection test midpoint sampling effort. In addition, surface water location 0236 was sampled two times during this event. The baseline area sampling effort consisted of sampling three observation wells (0405, 0488, and 0493, with two samples collected from 0493 at different depths) and two piezometers (0495 and 0497). Including one duplicate and one equipment blank, a total of 22 samples were submitted under this RIN number.

**Locations in Which Field Parameters Were Measured Only:** Field parameters were measured from observation wells 0581 and 0584 and surface water location 0240. Samples were not submitted to Paragon for laboratory analysis from these locations.

**Locations Not Sampled/Reason:** Piezometers 0494, 0496, and 0592 were purged dry and never recharged. As a result, samples were not collected from these locations.

**RIN Number Assigned:** All samples were assigned to RIN 04100121.

**Field Variance:** Only a 125 ml sample was collected for uranium analysis as opposed to the standard 500 ml sample volume.

**Quality Control Sample Cross Reference:** Following is the false identification assigned to the quality control sample:

FALSE ID	True ID	Sample Type	Associated Matrix	Ticket Number
2576	402	Duplicate	Ground water	NDY-110
2577	NA	Equipment Blank	Water	NDY-120

**Sample Shipment:** Samples with ticket numbers NDY-105 through NDY-120 were shipped in one cooler overnight FEDEX to Paragon Analytics, Inc. from Moab, Utah on October 15, 2004, Airbill No. 8473 2967 6189. Another cooler containing samples with ticket numbers NDY-121 through NDY-126 were shipped overnight FEDEX to Paragon from GJO on October 21, 2004, Airbill 8473 2967 6190.

**Location Specific Information - CF II Observation Well Sampling:** All observation wells were sampled using the micro-purge technique with a peristaltic pump and downhole tubing. Sample depths and water levels are listed below. **Note all sample depths are below ground surface.**

Well No.	Date	Time	Depth to Water (ft btoc)	Sample Depth (ft bgs)
0580	10/15/04	08:50	17.10	18
0582	10/14/04	18:21	16.79	18
0583	10/14/04	16:37	16.53	18
0585	10/14/04	17:54	15.82	18
0586	10/15/04	09:15	15.21	18
0587	10/14/04	17:22	15.72	18
0401	10/15/04	09:53	15.63	18
0402	10/15/04	08:15	15.61	17

Field parameters (only) were measured from observation wells 0581 and 0584. These data are presented below with sample depths (provided in feet below ground surface). Samples from these locations were not submitted for laboratory analysis.

Well No.	Date	Time	Sample Depth (ft bgs)	Depth to Water (ft btoc)	Field Parameters			
					Temp (°C)	SpecCond (µS/cm)	pH	ORP
0581	10/15/04	10:40	18	16.23	16.19	19,920	6.90	168
0584	10/15/04	10:29	18	15.81	15.85	18,225	6.93	171

**Location Specific Information - CF II Piezometer Sampling:** Only water levels were measured from piezometers 0590 through 0593 on October 14, 2004. An attempt was made to sample each of these piezometers on October 19, 2004. The depth to water data collected from October 14<sup>th</sup> and October 19<sup>th</sup> are presented below:

PZ No.	Date	Time	Depth to Water (ft btoc)
0590	10/14/04	13:01	3.70
	10/19/04	13:15	3.61
0591	10/14/04	13:02	0.95
	10/19/04	13:25	0.80
0592	10/14/04	13:03	3.68
	10/19/04	13:40	3.63
0593	10/14/04	13:04	1.88
	10/19/04	13:45	1.79

Only a limited volume of water recharged piezometer 0590 after the initial purge on October 19, 2004. As a result, this sample (~20 mls) was submitted exclusively for TDS analysis. Piezometer 0592 did not recharge 1 hr after the initial purge, and no sample was collected on October 19<sup>th</sup>. Photographs taken from both October 14<sup>th</sup> and the 19<sup>th</sup> are attached to this report.

**Location Specific Information - CF II Surface Water Sampling:** Colorado River samples were collected from surface water location 0236 (located 96 ft to the south of PZ 0591) on October 15 and October 19, 2004. Photographs taken on both days are attached to this report. The sample depths are provided below:

LOCATION	Date	Time	Sample Depth (ft bws)
0236	10/15/04	11:14	0.7
	10/19/04	14:43	1

Note: ft bws = feet below water surface

The field parameters were also measured at surface water location 240 on October 19, 2004. These samples were not submitted for analysis. This information is provided below:

Location	Date	Time	Sample Depth (ft bws)	Field Parameters			
				Temp (°C)	Spec Cond (µS/cm)	pH	ORP
240	10/19/04	13:35	0.5	13.58	6965	8.12	56

Note: ft bws = feet below water surface

**Location Specific Information - Baseline Area Observation Well Sampling:** Samples were collected from baseline area observation wells 0405, 0488, and 0493. The depth to water and sample depths are provided below:

Well No.	Date	Time	Depth to Water (ft btoc)	Sample Depth(s) (ft bgs)
0405	10/15/04	13:15	14.70	18
0488	10/15/04	13:34	14.60	33
0493	10/15/04	12:29	14.36	46 / 54

**Location Specific Information - Baseline Area Piezometer Sampling:** An attempt was made to sample the piezometers 0494 through 0497 associated with the baseline area on October 19, 2004. The depth to water data are provided below:

PZ No.	Date	Time	Depth to Water (ft btoc)
0494	10/19/04	11:20	dry
0495	10/19/04	11:27	3.99
0496	10/19/04	11:40	3.96
0497	10/19/04	11:46	1.84

Piezometer 0494 was dry; therefore, no sample was collected. Piezometer 0496 did not recharge 5 hours after it was initially purged, and no sample was collected. Photographs of each baseline piezometer location are attached to this report.

**Well Inspection Summary:** No inspection was completed.

**Site Issues:** According to the USGS Cisco Gaging Station (Station No. 09180500), the mean daily Colorado River Flows associated with this sampling effort are:

Date	Mean Daily Flow (cfs)
10/14/04	3,340
10/15/04	3,450
10/19/04	3,590

**Corrective Action Required/Taken:** None.

(KGP/lcg)

cc: J. D. Berwick, DOE-EM (e)  
D. R. Metzler, DOE-EM  
C. I. Bahrke, Stoller (e)  
L. E. Cummins, Stoller (e)  
S. E. Donovan, Stoller (e)  
L. M. Edwards, Stoller (e)  
S. D. Lyon, Stoller (e)  
K. E. Miller, Stoller  
K. G. Pill, Stoller (e)  
J. E. Price, Stoller (e)  
L. M. Wright, Stoller (e)  
Working File MOA



Piezometers 0590/0591 (far left) and 0592/0593 (right), 10/15/04



Piezometers 0590/0591 (left) and 0592/0593 (right), 10/19/04



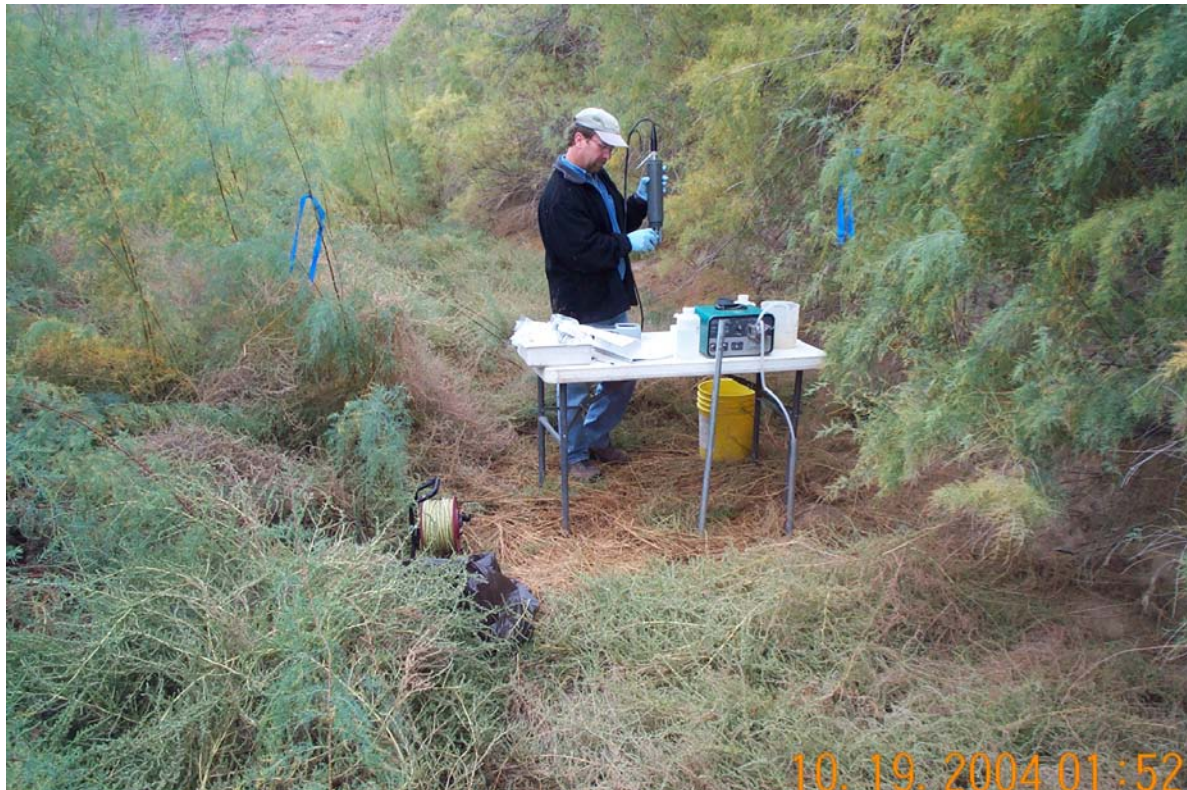


Sampling Surface Water Location 0236, 10/15/04



Surface Water Location 0236, 10/19/04





Sampling Baseline Piezometers 0494 (left) and 0495 (right)



Baseline Piezometers 0496 (left) and 0497 (right)